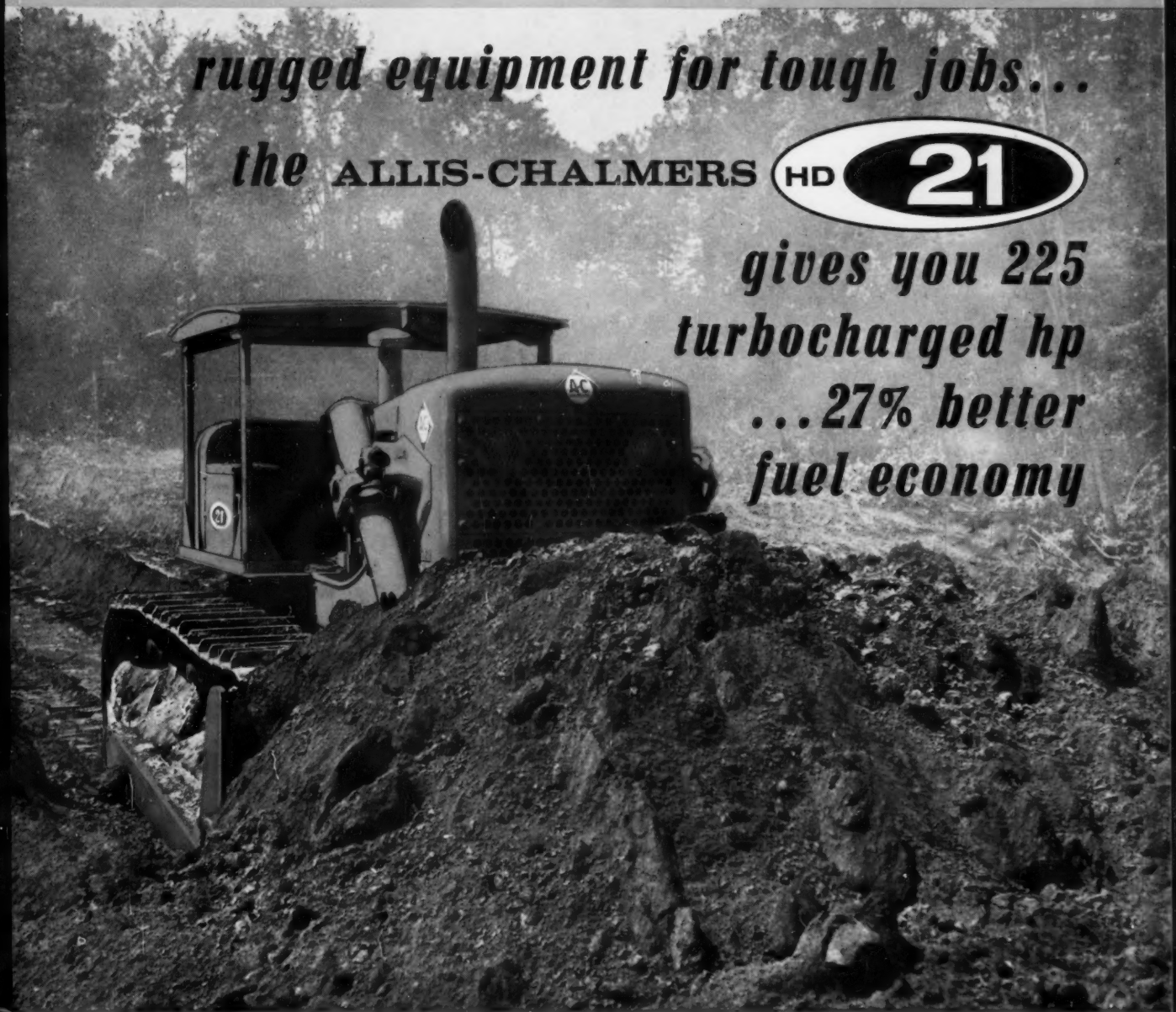
COAL MINING

November, 1961 Volume 38, No. 11



Highway

Allis-Chalmers HD-21 at C & K Coal Co., West Freedom. A-2050A

HIGHWAY EQUIPMENT COMPANY
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NEW!

385 HP D9G MOVES OVER 1300 CUBIC YARDS

Features of New Giant of the Earthmovers. . .

Power Shift

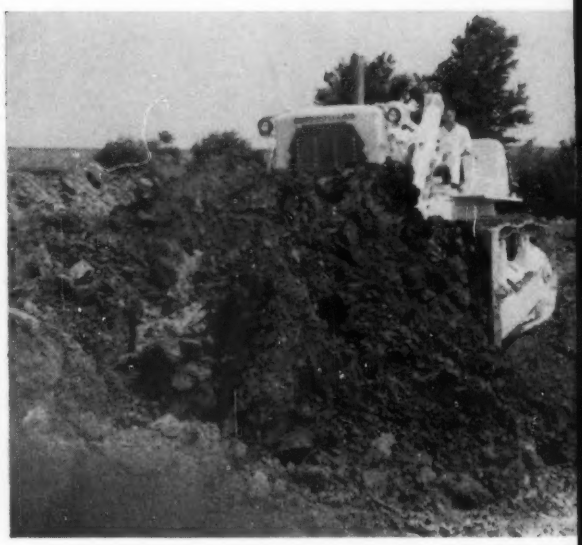
. . . this exclusive Caterpillar design combines the efficiency and "snap" of direct drive with the load-matching and anti-stall characteristics of a torque converter. A single lever gives finger-tip control.

Final Drives

. . . increase gear reduction ratios from 8.8:1 to 18:1, materially reducing torque load on all other power train.

Aftercooler

. . . air leaving the turbocharger passes through a water-cooled heat exchanger. Because cooled air has greater density, more air can be packed into the Cylinders, giving greater power out-put and efficiency.



R. D. BAUGHMAN OF BROOKVILLE PURCHASED THREE POWER-SHIFT D9'S IN THE PAST YEAR. THE LATEST IS THE SERIES G SHOWN ON THESE PAGES EQUIPPED WITH HYDRAULIC 9U BULL-DOZER BLADE.

Undercarriage

. . box section frame is wider and deeper than previous models. Lifetime lubricated rollers with special alloy deep hardened rims assure long life. Hydraulic track adjusters are standard.

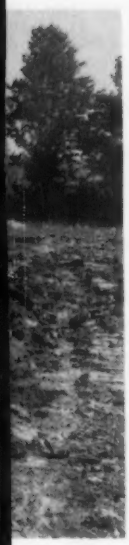
Attachments

. . . cable controls, hydraulic controls, pushing equipment, dozers, rippers and other attachments are designed to make full use of D9G power.

Fan

. provides maximum cooling during lug and reduces fan-absorbed HP by 30%.

IN 1 HOUR TEST . . . . on Baughman Strip Job*



A recent production study conducted at the R. D. Baughman coal stripping location near Brookville, Pa. revealed two outstanding facts:

(1) A new Series G, Cat D9 dozed an average of 13.3 solid cubic yards of overburden per blade load.

(2) This high-production machine moved 1,301 solid cubic yards over-burden over a 49 foot average push distance (center of massive cut to center of massive fill) in one hour.

A profit-making performance such as this may not always be as great on other jobs, but the results of this test indicate the tremendous workability of the D9G.

The 385 flywheel horsepower, turbocharged and aftercooled engine was built specifically for the D9 tractor and provides the necessary power for all stripping applications.

Speed, too, helps to set production records like this. The Caterpillar power shift transmission, combining the characteristics of a torque converter with the economies of direct drive contributes to lower cycle times.

See the new D9G in action. Discover for yourself how this powerhouse from Beckwith can help you save on pioneering, removing overburden and on backfilling.

* Job study reprints available on request.

JOB STUDY DATA

DEPTH OF COVER CUT DOWN BY D9G IN 1 HOUR TEST	10 to 12 feet
TYPE MATERIAL	Topsoil, clay, shale
TOTAL YARDAGE IN TEST	1,301 solid cubic yds.
TIME OF TEST	1 Hour
NO. OF BULLDOZER PASSES	98
AVERAGE PUSH DISTANCE	49 feet from center of massive cut to center of massive fill.
AVERAGE TIME PER PASS	.62 minutes
AVERAGE LOAD PER PASS	13.3 solid cubic yds.
COSTS INCLUDED	Owning and Operating Cost of D9G and Cost of Operator
COST PER YD. OF DIRT MOVED	Less than any other Track-Type Tractor in the D9 Class

Caterpillar, Cat and Tractavator are Registered Trademarks of Caterpillar Tractor Co.

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COAL MINING

Vol. XXXVIII November, 1961 No. 11

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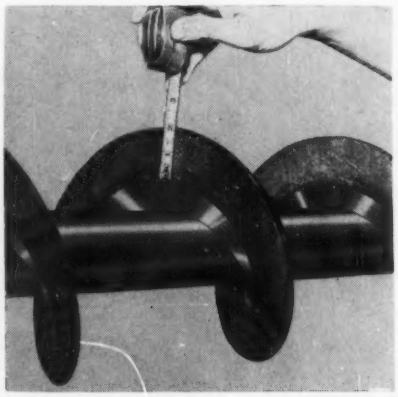
● This photo shows an Industrial Machinery Company abrasion-resistant screw conveyor with two-inch-wide application of special hard-facing alloys compound on conveyor flights.



Abrasion-Resistant Screw Conveyor Industrial Machinery Company, Inc. Fort Worth, Texas

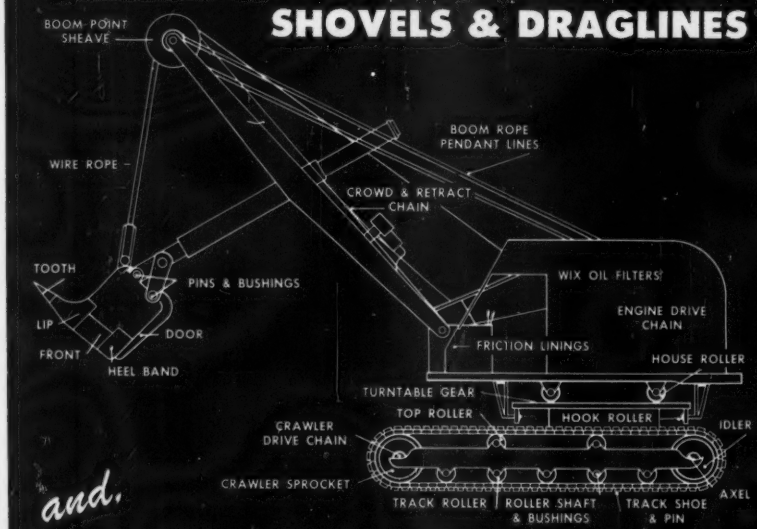
Abrasion-resistant conveyors like this, which offer five to six times the service life of untreated conveyors, were made possible through refinement of an exclusive hard-facing alloy process developed by Industrial Machinery Company, Inc., of Fort Worth, Texas.

Treated conveyors are ideal for handling such materials as alumina, bauxite, cement, cinders, coal, coke, gravel, ground brick, sand, slag and numerous other dry, free-flowing and highly abrasive materials.

Food industry uses include soy beans, pellet-type processed feeds and other materials with comparable abrasiveness.

Once applied to Industrial's blue steel screw conveyors, the alloy surface is virtually impossible to even grind off.

QUALITY REPLACEMENT PARTS FOR SHOVELS & DRAGLINES



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In a most modern and well equipped rebuilding shop

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Made To Withstand High Drilling Speed Whip And Torsional Strain Of Electric Drills

Drills holes faster - Will not snap off shank or chip points - Outlasts four or five ordinary augers

THE SALEM TOOL COMPANY SALEM, OHIO, U.S.A.

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Strip at a Profit

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where other machines lost money

Let us send you records of such results –

Where Page Walkers made a losing job profitable – other cases where the owners made big increases in their profits on operations which were already making money.

Page Draglines consistently out-perform slower machines in every kind of digging. And are built extra strong, are real work-horse machines that can stand up with the fastest practical hoist and swing speeds which are needed to give the greatly increased yardage.

Powered by the Page V-type diesel, designed especially for dragline work, with bigger bearings and pistons, slow speed. Or furnished with full electric power if you want it.

Get an estimate of your own stripping costs with a Page. We'll be glad to give you figures you can depend on, based on accurate records of what has been done.

BOOMS UP TO 225 FT. — BUCKETS UP TO 30 YDS. — with either Diesel or Full Electric Power.

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For High Production and Lowest Operating Costs - -

PAGE WALKING DRAGLINES

Do You Know?

The first fully miniaturized electronic computer to be shown actually operating has been demonstrated. It is the size of a loaf of bread.

The baby computer, developed at the Burroughs Corporation's Laboratories, Paoli, Pa., can solve single-purpose problems at speeds of a room size computer.

Company spokesmen said a working model was built to show that existing electronic components can be used in shrinking a commercial computer from room size to size of a desk, and that military electronic equipment can be compressed to a convenient size for aircraft, spacecraft and missiles.

The computer has 5,500 components in a space measuring three by six by 11 inches, weighs 12 pounds, and can perform 33,000 mathematical calculations per second.

Neglected areas of research and development in the use of fuels could get a strong Federal push from results of a recently authorized Senate probe aimed at laying the foundation for a national fuels policy.

One of the expected recommendations is the reactivation of research programs on means of producing oil from coal and shale. Work began during World War II, when new sources of liquid fuels were in heavy demand, but was discontinued several years ago.

Continued research on production and piping of gas produced from coal, as a replacement for depleted natural gas fields, may also be urged.

The policy study will be conducted by the Senate Committee on Interior and Insular Affairs. It was first proposed by Sen. Jennings Randolph (D-W. Va.).

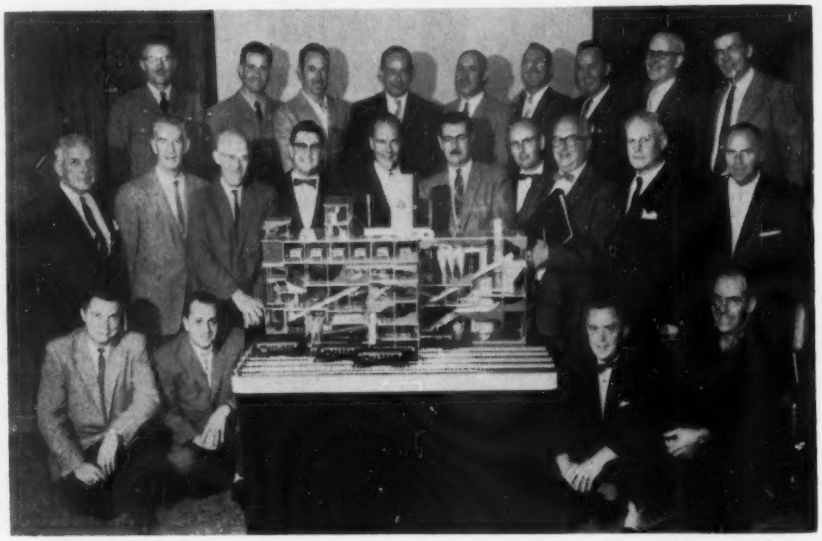
Sen. Randolph points out that the U. S. has a "virtually inexhaustible" supply of coal, which will last 2,000 years at current production rates.

He stresses, however, that the Senate study is not for the purpose of producing a policy to give the coal industry "an unjust advantage" over oil and gas interests.

The senator told the Electrical Heating Conference that lack of a fuels policy led to unemployment in coal-producing states and "financial distress" for coal-hauling railroads, when our energy base was transformed from coal to oil and natural gas. Nuclear power will bring new problems and a further transformation "in the next four decades."

He predicted that by the year 2,000 nuclear power will supply about 20% equivalent to about one-half of today's total energy production.

HERE AND THERE IN THE COAL INDUSTRY



To convey long-distance information about the new coal preparation plant being built at its Federal No. 1 mine in Grant Town, W. Va., Eastern Gas and Fuel Associates has taken a cutaway scale model to several customer meetings. The first meeting (above) was in Ottawa, Canada, for power plant and industrial purchasing agents, engineers, and other purchasers of Eastern's steam coal. Eastern officials accompanying the model were B. P. Romero, manager of utility and industrial sales; V. J. Houghtaling, district sales manager at Syracuse, N. Y.; and R. I. Bush, assistant manager of customer services. The session was held at the McDonald Motel in Ottawa. A similar meeting was held in Buffalo, N. Y. The new preparation plant, designed to provide precise control of coal quality, is scheduled to go into operation early in 1962.

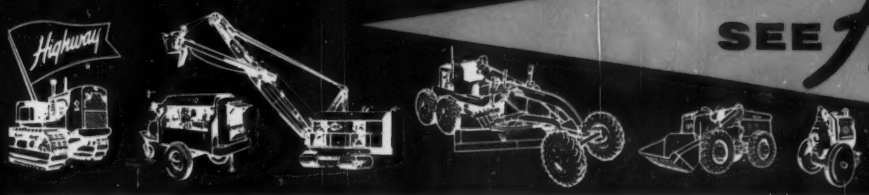
● Paul Morton, president of Cannelton Coal Co., was reelected president of the Kanawha Coal Operators Association at the annual meeting in Charleston, W. Va. Also reelected were: C. O. Kane, manager of mines, Armco Steel Corp., vice president; L. Newton Thomas, president of The Carbon Fuel Co. and an NCA director, treasurer; and Quinn Morton III, executive secretary.

Directors elected include: Mr. Kane; Mr. Thomas; Mr. Morton; H. B. Pierson, president, Glogora Coal Co.; W. D. Hamilton, vice president, Oglebay Norton Co.; Alan H. McBane, vice president, Valley Camp Coal Co.; Glen Kitchen, general manager, The Youghiogheny and Ohio Coal Co.; Dan S. Davison, executive vice president, Riverton Coal Co.; C. Lynch Christian, Jr., vice president, Imperial Colliery Co.; John Winterhaler, plant manager, Union Carbide Metals Co. and C. J. Robinson, General Manager, Westmoreland Coal Co. The association elected three directors emeritus, F. O. Harris, W. F. Pioch and Frank L. Hornickel.

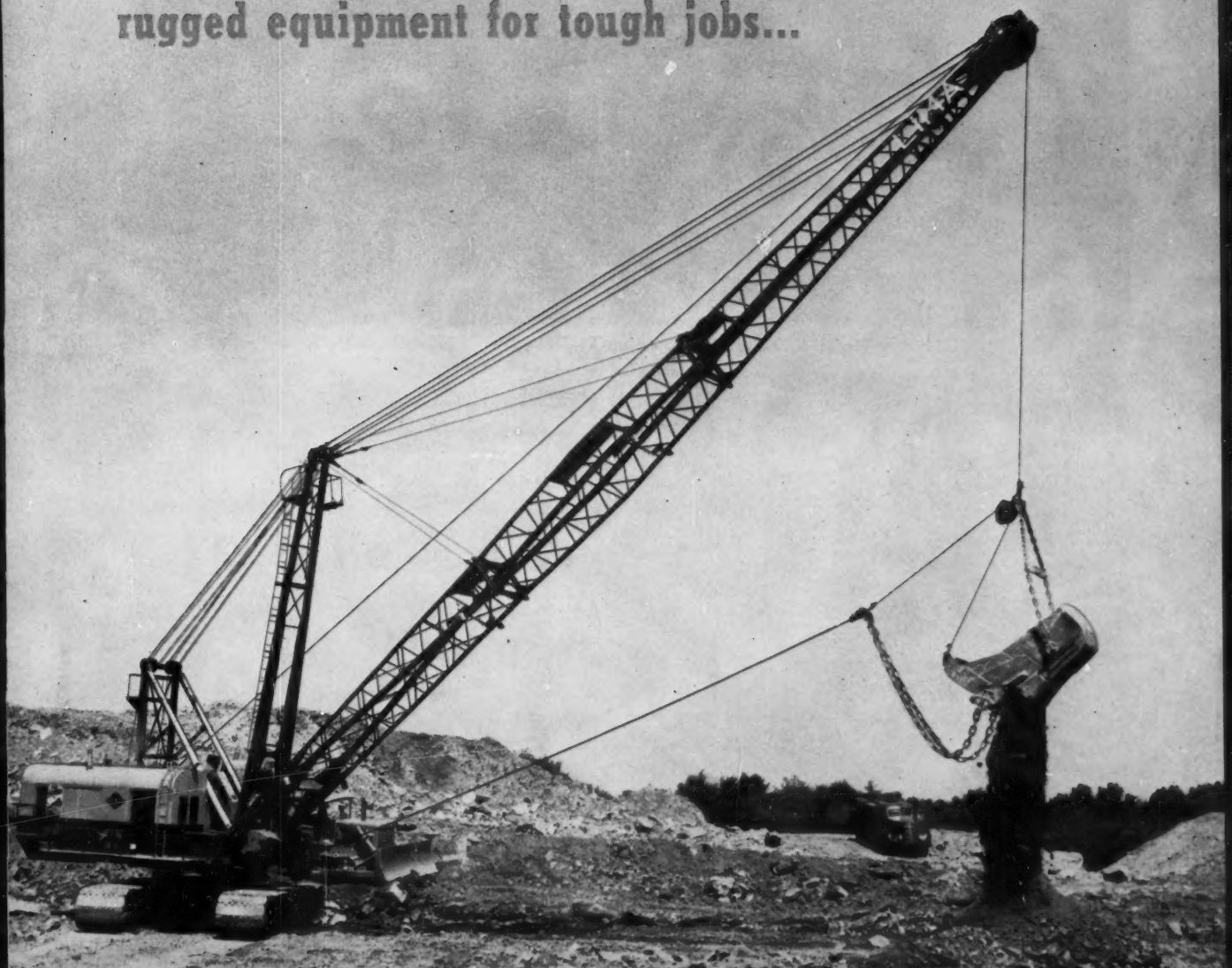
● Layton DeLauter of DeLauter Coal Co. has been elected president of the Ohio Reclamation Association, an organization of strip mining operators engaged in the reclamation of strip mine lands in Ohio. R. C. Whitaker of the United States Coal Co. was named to succeed Mr. DeLauter as vice president. New board members named are Roy Friel, Friel Coal Co., and Wylie Fritts, Adams Mills Coal Co. Reelected to the board were: Charles Atha, Blue Crystal Mines; Mr. DeLauter; William V. Hartman, Peabody Coal Co.; A. D. Henry, North American Coal Corp.; R. L. Ireland, Consolidation Coal Co.; Richard James, James Brothers Coal Co.; C. H. Minich, East Fairfield Coal Co.; Miller Munjas, Truck Coal Co.; John W. Taylor, J. T. Coal Co.; and Mr. Whitaker. Larry Cook was reelected vice president of the association.

For the best in all types of mining equipment...

SEE Highway FIRST



rugged equipment for tough jobs...



Highway

Lima 2400 strips overburden for Harold A. Siegel Coal Co., Fryburg.

A-6178A

HIGHWAY EQUIPMENT COMPANY

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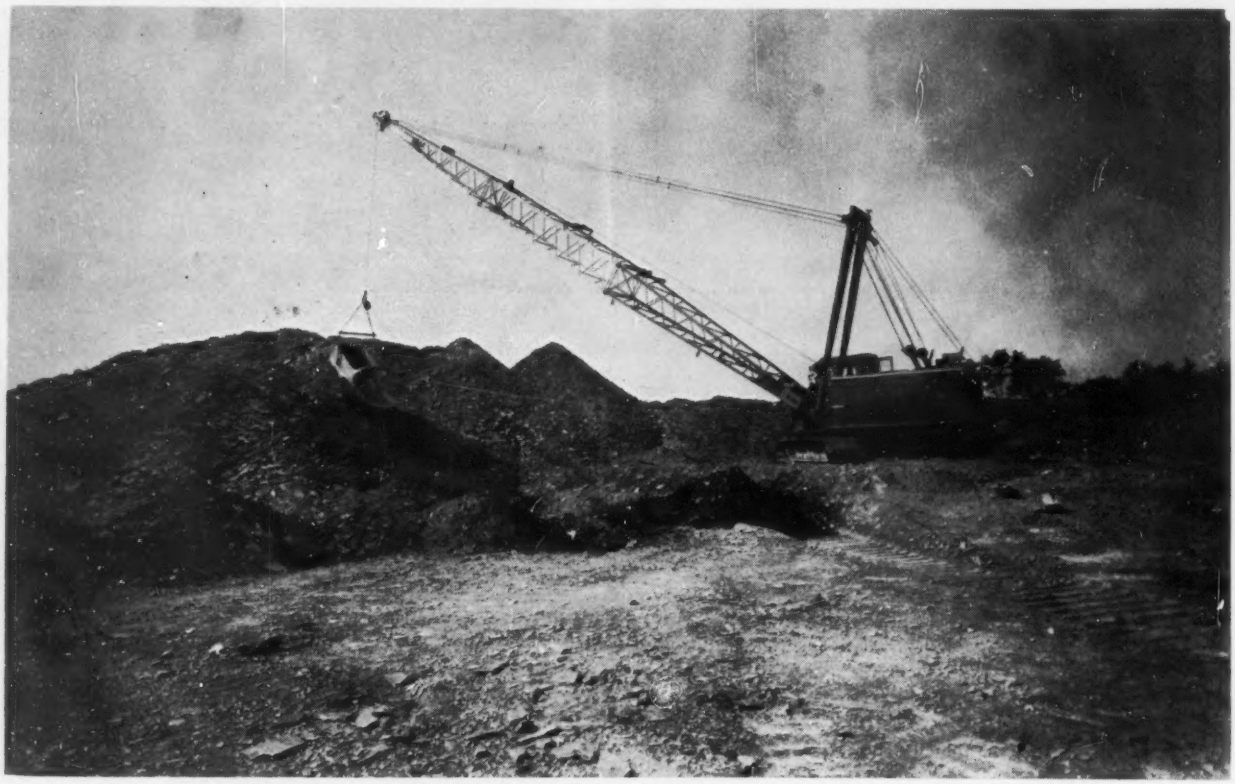


Manitowoc Model 4500 Dragline stripping 34 feet of overburden down to the coal seam.

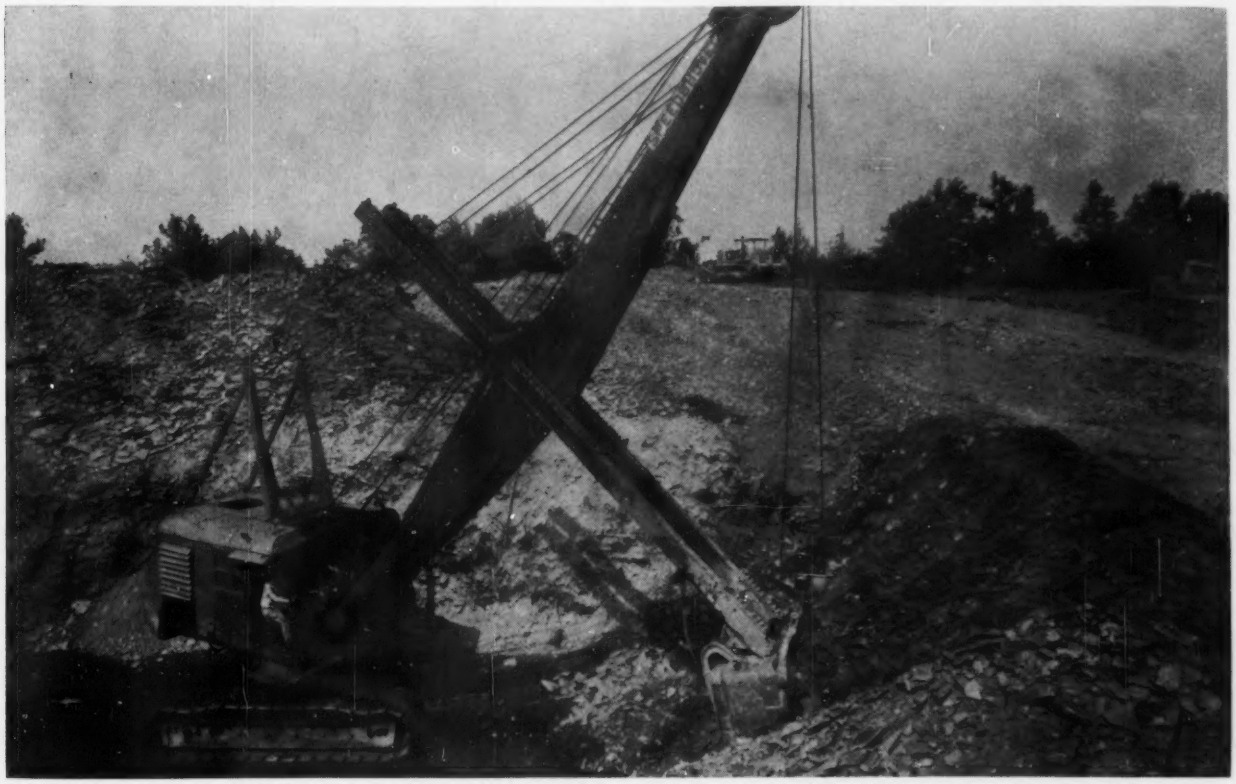
Dragline, Tractor and Shovel Stripping at Coal Ridge Coal Co.

Having diversified layers of cover of various heights on its coal, the Coal Ridge Coal Company is using a Manitowoc Model 4500 Dragline with 120 Foot Boom and 6 yard bucket, a Caterpillar D-9 Tractor and Manitowoc Model 3500 Shovel to strip overburden lying on the Miller "C" seam of coal near Keewayden, Clearfield County, Pennsylvania.

Overburden moved runs as high as 34 feet. The coal averages 24 inches thick. In one of the pits the Model 4500 dragline strips all overburden down to the coal seam. In another pit, the Caterpillar D9 Tractor strips and pushes overburden down to level that permits the Manitowoc Model 3500 Shovel, working on the seam of coal, to spoil on the highwall which has been reduced in height by the tractor.

5245 Peach St. • Erie, Pa.

Caterpillar D-9 Tractor stripping overburden and pushing away from pit to permit the Model 3500 shovel to spoil on reduced highwall.



Manitowoc Model 3500 Shovel, working off the coal seam, stripping overburden left by the tractor, spoiling on the highwall.

Left to right: C. A. Fleck, Advertising Manager, Beckwith Machinery Co. J. E. McGowan, District Rep. Caterpillar Tractor Co., next and the last on right are the Edmonds Brothers of the Edmonds Construction Co. next to last on right is W. H. Dickey, Sales Manager for Beckwith Machinary Co.

Left: Elmer Whitemer, Whitmyer Equipment Co., Junior Orr, Wm. M. McIntyre, both of McIntyre & Orr Coal Co., Dan Hilliard, Hilliard Coal Co., C. M. Harasty, Sporio Coal Co.

Annual Meeting
Of The
Independent Mineral Producers Association

Long-range educational planning is essential to industry because economic growth is not only generated by capital in the form of tools and machinery but by the human who operates machinery. As technological improvement increases efficiency of machinery, education increases efficiency in the human. Increase in the 'human factor' plays a major role in economic growth.

The recognized fact that industrial economic growth is increasingly dependent on specialized competence in technologic operation, which is controlled by management, leads to the conclusion that industrial educational planning must pay attention to the development of this kind of competence and that job falls on management.

Poor attendance at the sessions of this year's meeting of the Independent Mineral Producers Association, held in the Roosevelt Hotel, Pittsburgh, Penna. October 20 indicate that members of this association are not aware of these facts.

The over-all attendance at this years meeting was smaller than in previous years. This could indicate that subjects for discussion at the sessions have been in keeping with these progressive times.

Technology, which is bringing with it more brain power in the man in industry, is showing up in behavior of the individual at social gatherings which are now more on the side of exchange of ideas.

Left: Walt Gaspar, Highway Equipment Co., R. W. Whitman, Allegheny River Mining Co., P. A. Lantzy, C. H. Snyder Coal Co.

Left: Frank Steffler and Mr. Wright of the Wright Coal Co. and Bill Gottschalk of the Anderson Equipment Co.

Left: J. J. Janssen, Highway Equipment Co. C. H. Snyder, Snyder Coal Co., T. R. Helsing and Jack Docherty, Highway Equipment Co. C. E. Starr, Pennsylvania RR., H. R. Richards, B. & L. E. RR., T. R. West, Pennsylvania RR.

Kneeling, Left: Harry A. Nassif, Bill Voezki State Equipment Co., Paul Sporio, Sporio Coal Co. Ed Kutsenko, Kutsenko Coal Co., Back row, Left: H. E. Hemmingway, State Equipment Co., Howard Detwiler, Detwiler Industries, J.C. McNight and Charles Miller of Miller-McKnight Coal Co.

U. S. Steel's Gary District became a member of the American Tree Farm System today. The District received a Certificate of Membership because of its continuing interest in forest conservation. C. W. Connor, Jr. (center), Gary District's general superintendent, received a tree farm sign from C. R. Sullivan (left), West Virgina Tree Farm Committee. Dr. Warden C. Lane (right), Director, West Virginia Department of Natural Resources, was the principal speaker. Over 150 people attended the ceremonies held at the Sandlick Sportsmen's Club on No. 9 Mountain.

In recognition of outstanding management of its forest lands, U. S. Steel's Gary District has been awarded a Certificate of Membership in the American Tree Farm System, C. W. Connor, Jr., general superintendent, announced today at Gary, W. Va.

State, county and local officials, together with U. S. Forest and Soil Conservation Services, Conservation Committee members and union, industry and press representatives, attended the presentation ceremonies held at Sandlick Sportsmen's Club on No. 9 Mountain.

"U. S. Steel's Gary District," Mr. Connor pointed out, "received the Certificate because of its continuing interest in forest conservation. This long-range timber conservation program began in 1953 and is the largest tract in West Virginia to be designated a member of the American Tree Farm System."

An important aspect of this U. S. Steel District's timbering plan was the formation of a modern forest inventory system establishing an up-to-date method of effecting a perpetual forest management program. The program includes the listing of all types of trees, size by diameter, quality, volume and other important forest utilization information.

A significant part of Gary District's timber conservation program centers on cooperation with the state's Department of Natural Resources particularly in control of forest fires.

The conservation program is under the direct supervision of Forester J. L. West, district land agent.

Concluding, Mr. Connor said it is anticipated that through the use of modern woods management practices, a selective growing and cutting operation has been developed which should provide sufficient growth to maintain sustained yield. In this connection, tree harvesting becomes as important as the planting of tree seedlings and the sowing of tree and grass seeds.

● Production of Allis-Chalmers engines has started in a new 515,000 sq. ft. engine manufacturing facility recently completed at the Company's Harvey (Ill.) works. Erected on 35 acres the Company owns in the Village of Phoenix, the new massive 440 x 1,100 sq. ft. steel and concrete structure houses some of the most modern production equipment available to the engine manufacturing industry. This equipment, together with the latest production techniques, combine with the many other modern facilities to give the Company an automotive-type straight line production system under which material is fed into the line at one end of the building to emerge as a completely assembled engine at the other end, ready for the final test prior to shipment.

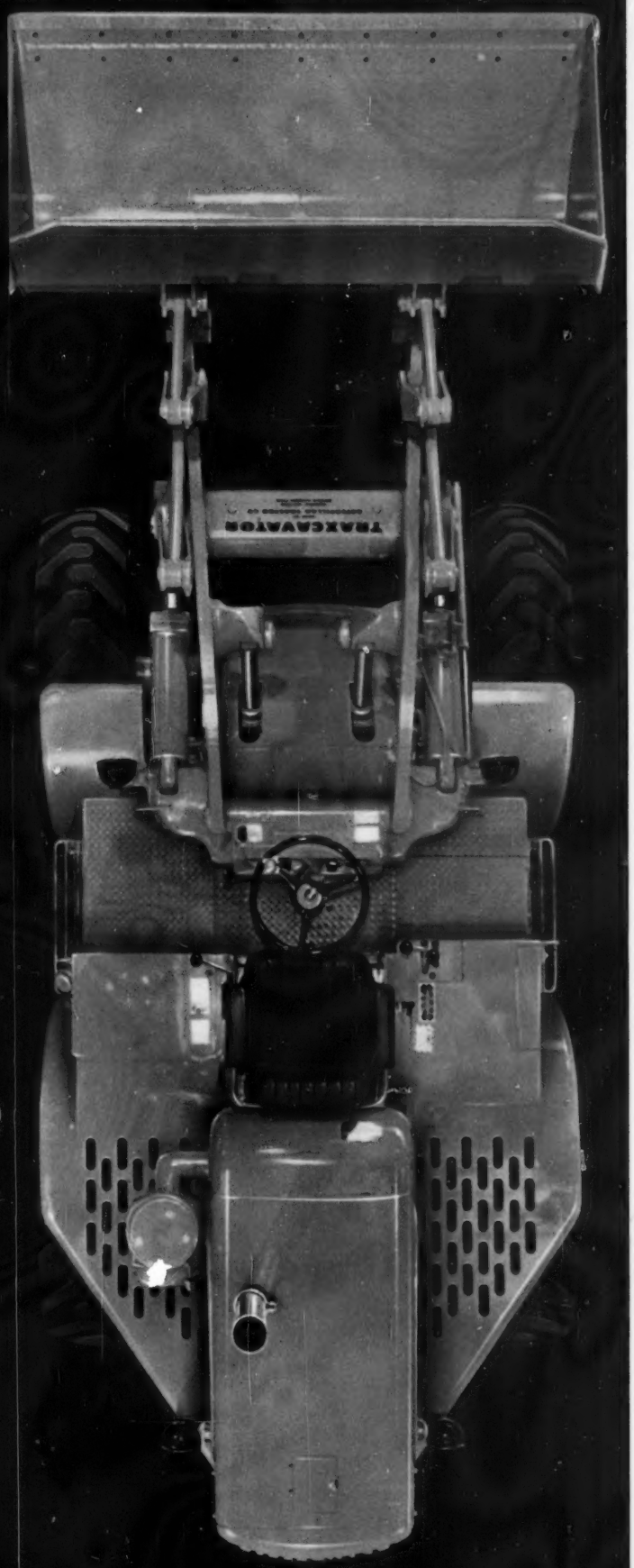
The new plant has four semi-automatic assembly lines which are capable of producing more than 130 different variations of four and six cylinder diesel, gasoline, butane and gas engines. A fifth line is manually controlled and from it flow engine driven electric sets, power units, marine engines, and special industrial engines.

Engines currently produced by the new plant are in the 41 to 350 hp ranges. Owen J. Higgins, General Manager of the Harvey Works, points out, however, that Harvey's new engine facility has been designed, built and equipped in such a manner that expansion to larger horsepower engines can be carried out in a relatively short time when the need arises.

More than 600 machine tools have been installed in the new plant, including over 200 completely new units. Machine tools moved from the former engine plant are generally not more than two or three years old. Each was steam cleaned, painted and otherwise renovated before being installed in its new location.

One of the many features of the new plant, in line with the extensive quality control program in effect at Allis-Chalmers, is the area for testing engines as they come off the assembly line. Gasoline engines are "hot tested" on 20 stands. Diesel engines are checked in 34 test areas each with its own latest electronic equipment designed by the Company engineers in cooperation with the manufacturer of such equipment. These test consoles are complete with gauges, meters and other instruments, which, among other

(Continued on Page 18)



FOR FUTURE REFERENCE

when you buy your next WHEEL LOADER

Here's a fact file for your reference on one line of wheel loaders. When you're ready for a new wheel loader you can check the features of these machines against all other lines. Then ask for a demonstration on your job and watch the features prove themselves.

POWER SHIFT

LIVE ACTION HYDRAULICS

AUTOMATIC BUCKET POSITIONER

OPERATOR SAFETY

DEALER DEPENDABILITY

fact file on CATERPILLAR Wheel Loaders

Today you can choose from more than 100 different makes and models of wheel loaders. You can find almost any combination of bucket sizes, horsepower, weight and features. But which loader has the features *you* want? The production, the operating ease, the safety, the dependability, the right price?

Look at these facts on the Cat line of wheel loaders. No other line can match them, let alone beat them. Think of your operation—put a Cat 922, 944 or 966 in the picture.

POWER SHIFT

"It's a loading machine and smooth to operate—all power boosted controls," said Lowell S. Dunn whose 944 averaged 2940 yds. of rock and sand loaded in trucks per 10-hour day.

On Cat loaders you can change either speed or direction by moving one lever—no throttle, no brake, no clutch manipulations necessary. A modulating valve feeds pressure to planetary clutch packs at just the correct rate to permit fast shifting without jerking. The loader can shift from a fast 2nd forward to 2nd reverse smoothly without jerking the operator's neck.

[illegible]

"We beat another unit by 9 seconds on digging and lifting," says the 966 operator for Brown & Lambrecht.

"Live action" means two things for Cat wheel Loaders: hydraulic speed and constant power. For you this means faster loading because there are no wait times for the bucket to raise into dump position or drop into digging position. At the same time, there's always plenty of hydraulic power even when the machine is crowding into the pile. The reasons? A high-output, vane-type pump is geared to the torque converter on the INPUT side where it's little affected by the load on the drive train.

AUTOMATIC BUCKET POSITIONER

"We figure travel speed plus the automatic bucket positioner give us at least 25% more production over any other machine of the same size," says Harris Sand Pit owner.

This automatic bucket control gives your operator a "third hand" for faster maneuvering. After he gets his load, he simply pulls back the lift lever. While he's steering, a notch holds the lever until the bucket is in full lift position, then the lever automatically snaps into "hold." On his way back to the stockpile or bank, the automatic controls take over again, tilting the bucket back to the correct digging angle.

OPERATOR SAFETY

"We picked a Cat loader for its safety features, easy on-and-off for the operators, among other reasons," says official for town of Ellery, N. Y.

Most striking feature of the new Cat wheel Loaders is the safe, uncluttered design. Hydraulics and loader lift arms are located well ahead of the operator compartment. He can board the machine from either side in three easy steps, no tires or lift arms to crawl over. And he sits in the big, roomy seat with close controls that he doesn't have to reach for. He's comfortable, safe and confident.

DEALER DEPENDABILITY

"Service and parts availability were big reasons for switching to the Cat wheel Loader," says Superintendent Donald Clark of Palmer Paving Corp.

Wherever your equipment goes, your Caterpillar Dealer has a complete stock of parts. And you'll find this down time insurance backed by complete shop and field repair facilities.

Caterpillar Dealer service begins before you own a Cat unit with machine recommendations, time studies and—if you are interested—financing arrangements.

Let's Demonstrate A CAT

WHEEL LOADER

ON YOUR JOB

You have seen so ne of the facts about Cat wheel Loaders. When you're ready, call us for a demonstration on your job.

You'll see these features in motion plus lots more. For instance, dual brakes are a production booster. The right brake stops machine *with transmission engaged,* permits inching down a slope, cautious maneuvering in tight quarters and safe machine braking at highway speeds. The left brake neutralizes the transmission as it stops the loader, prevents creeping when dumping and gives the operator a quick, convenient way of keeping the engine RPM up for the hydraulics while stopping the loader in a limited space.

You'll discover many more extras in the three Cat wheel Loaders.

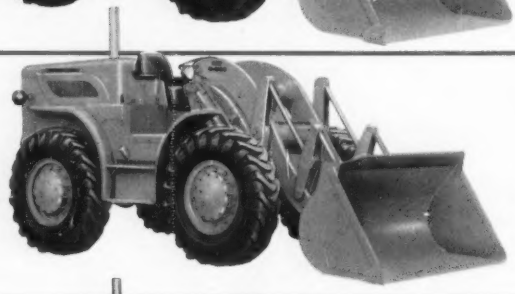
966

2¾ yd.

- 140 HP turbocharged Cat Diesel Engine (max. rating 205 HP)
- 2¾ yd. standard bucket
- 12′ 10″ lift height (to bucket hinge pin)
- 57″ dumping reach at 7′ height

944

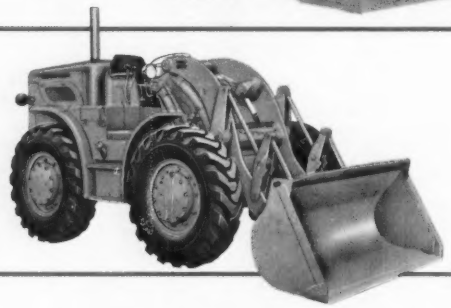
2 yd.



- 105 HP turbocharged Cat Diesel Engine (max. rating 135 HP) (gasoline engine optional)
- 2 yd. standard bucket
- 12′ lift height (to bucket hinge pin)
- 51″ dumping reach at 7′ height

922

1¼ yd.



- 80 HP turbocharged Cat Diesel Engine (max. rating 105 HP) (gasoline engine optional)
- 1¼ yd. standard bucket
- 11′ 2″ lift height (to bucket hinge pin)
- 41″ dumping reach at 7′ height

CATERPILLAR

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OHIO MACHINERY CO.

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WALKER MACHINERY CO.

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4010 Emerson Ave., Route #2, Parkersburg, W. Va.

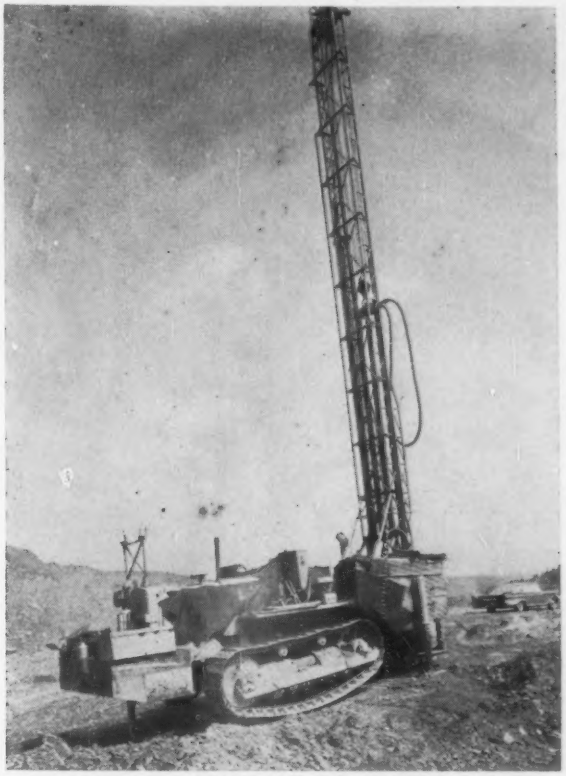
CM-14

DL-11614C

PRINTED IN U.S.A.

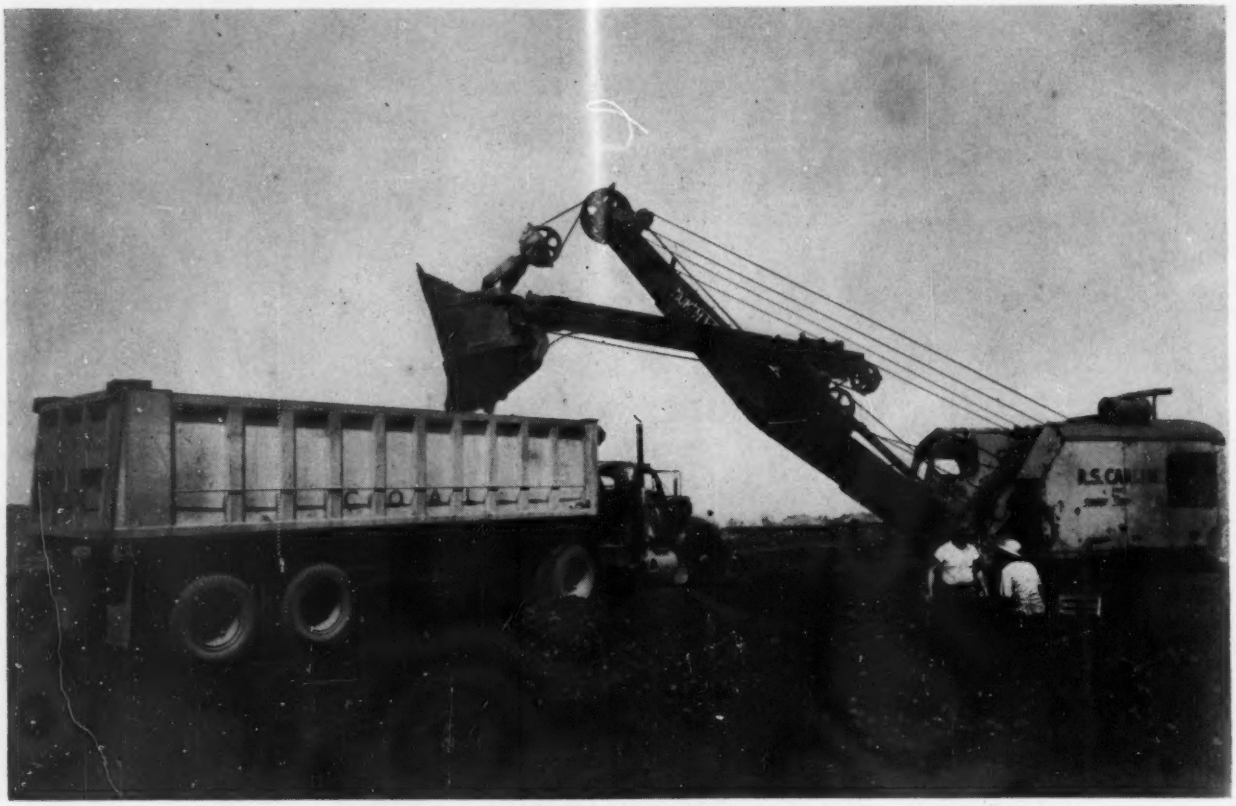
Multi-Seam Stripping With 13-Yard Dragline At Carthus, Clearfield County, Pennsylvania

Using Large Off-The-Property Haulage Units



Tractor mounted drillmaking blast holes in overburden on the "C" Prime seam.

The 13-yard Electric dragline stripping "C" (middle) seam.



Loading out the "C" seam of coal. Note the large Diesel driven haulage unit being loaded

Keeping pace with industrial progress, coal strippers in Clearfield County are advancing, step by step, to larger and more productive equipment. In this process of advancement, bigger and riskier operations are being undertaken, with a much greater capital outlay.

At Carthus, R. S. Carlin, of Snow Shoe, Pa., is involved in a 3-seam operation at which he strips as much as 120 feet of overburden to get up to 70 inches of coal. The seams being stripped are the central Pennsylvania "C" Prime 20 to 22 inches thick: the "C" seam averaging 24 inches thick and the "B" seam averaging 24 inches thick.

Overburden consists of yellow shale, gray shale and some sandstone. The overburden is drilled for blasting with a Davey drill, mounted on a new Caterpillar D-8 tractor.

Stripping is done with an electrically operated dragline having 165 foot boom and 13 cubic yard bucket.

The coal is loaded out with a Northwest shovel, equipped with Maximon 2¼ cubic yard coal loading bucket. Hauling is done in large Off-The-Property hauling units that deliver direct to customer or to a preparation plant at Snow Shoe. Large hauling units require good roads the year around, so a very well maintained haulage road is provided to the pits.

WHEN YOU SEE EQUIPMENT LIKE THIS, YOU'RE LOOKING AT A GOOD STRIP OPERATION!

Allis-Chalmers HD-21

Allis-Chalmers TL-16... one of 6 Allis-Chalmers Tractor-Loader models.

Allis-Chalmers HD-21 and Lima 1250 at Thompson Bros. Coal Co., Philipsburg.

Highway

HIGHWAY EQUIPMENT COMPANY

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40 Hoover Ave. • Du Bois, Pa.
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Allis-Chalmers • Master • Lima • Thor • Heltzel • Gar Wood
Jaeger • Buffalo-Springfield
Rogers Trailers • Lippmann Crushers

A-5719A

(Continued from Page 10)

things, give readings on actual fuel consumption, brake horsepower output, and other operating factors of each engine on test. This assures that each diesel engine shipped is in accordance with its rated specifications.

A mobile calibrating cart is used to check the accuracy of each console. It is capable of simulating all temperatures, pressure, speeds, fuel weights and perform other functions necessary to test and calibrate the instrument panels of each console.

Included among the many new production tools are tape controlled units installed to meet many of the special problems unique to the commercial engine production field.

Adjoining the main 11-acre engine plant is a separate building in which are housed all power and plant service facilities. Fuels and lubricants are piped to points of use in the plant and test area from underground storage located near the service building.

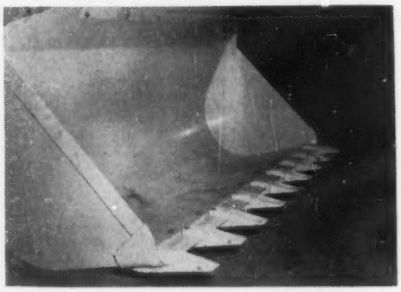
Engines produced at the Harvey Works are primarily used in many Allis-Chalmers products, as for instance, farm equipment made at the Company's plants in Independence, (Mo.), LaPorte, (Ind.), and West Allis, (Wis.); construction machinery from its Works at Cedar Rapids, (Iowa), Springfield, (Ill.), Deerfield, (Ill.), and West Allis; and a line of lift trucks produced at the Harvey Works itself.

In addition Allis-Chalmers engines continue an important source of power supply for the commercial engine markets, including the construction and logging industries, oil fields, for irrigation, the marine trade, and industries requiring stationary and portable electric sets.

Architect and general contractor for the new engine manufacturing plant was the H. K. Ferguson Company of Cleveland, Ohio. This firm also constructed the Company's Research Center, located immediately east of the new engine plant. Since its completion in 1958, the Research Center has been the scene of Harvey Works research, design and engineering of engines and lift trucks.

The Harvey Works has been a part of Allis-Chalmers since November 1, 1953, when the Company acquired the former Buda Company. Until now it had been composed of Plants 1 and 2, which with the Engineering Center, provides approximately 654,000 sq. ft. of space. Completion of the new engine production facility has increased this area to more than 1,150,000 sq. ft.

● New, longer tips are now available for the bucket teeth of the three Caterpillar track-type Loaders and the two larger Cat wheel-type Loaders, according to a Caterpillar Tractor Co. announcement. With added steel "out front" in the wear zone, the new tips last up to twice as long in abrasive material as the previously-available shorter tips. The shorter ones still are available and are recommended for use in high impact applications such as rock work.



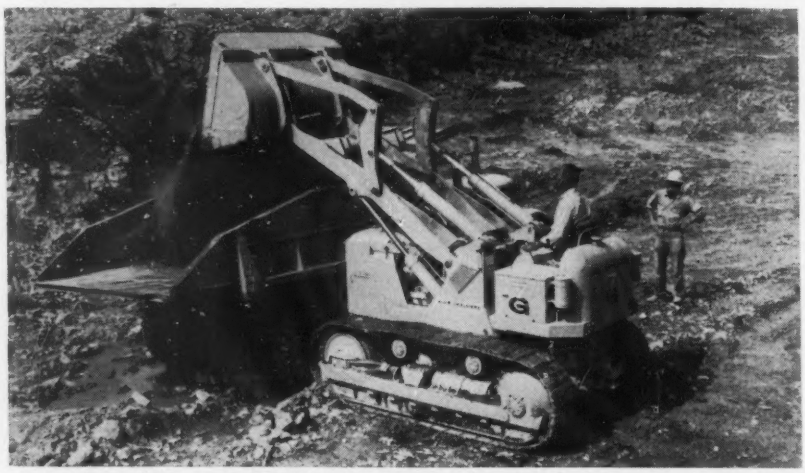
New, longer tips for the bucket teeth for the Caterpillar 944 and 966 wheel-type Loaders are of a "runner" design. The top of the tooth is ribbed and wears slightly faster than the flat bottom surface, keeping the tooth sharp throughout its wear life.

The new tips are of two designs — "runner" and "digger." The runner type is for use with wheel loaders, which normally are used for loading out of stockpiles, resulting in maximum wear on the bottom of the tooth. The digger type is designed for use on track-type machines which are likely to be used for excavation, resulting in maximum wear on the top side of the tooth.

Both types of tips are flat on one side and ribbed on the other. Runner tips are mounted on the bucket rib side up; digger type, rib side down. Because the latter side wears slightly faster than the flat side the tip remains sharp throughout its useful life. Ribbing also avoids corner rounding; providing a straight leading edge across the full width of the tip at all times.

The new tip for the two wheel-type loaders (944 and 966) is 1-7/8 inches longer than the current shorter unit and is 22% heavier. The one for the two smaller track-type loaders (933 and 955) also is 1-7/8 inches longer and is 32% heavier. The new tip for the largest track-type loader (977) is 2 inches longer and 45% heavier. In each case the added steel is all in the wear area.

The new tips fit the bucket tooth adapters currently offered for both the wheel and track-type loader buckets.

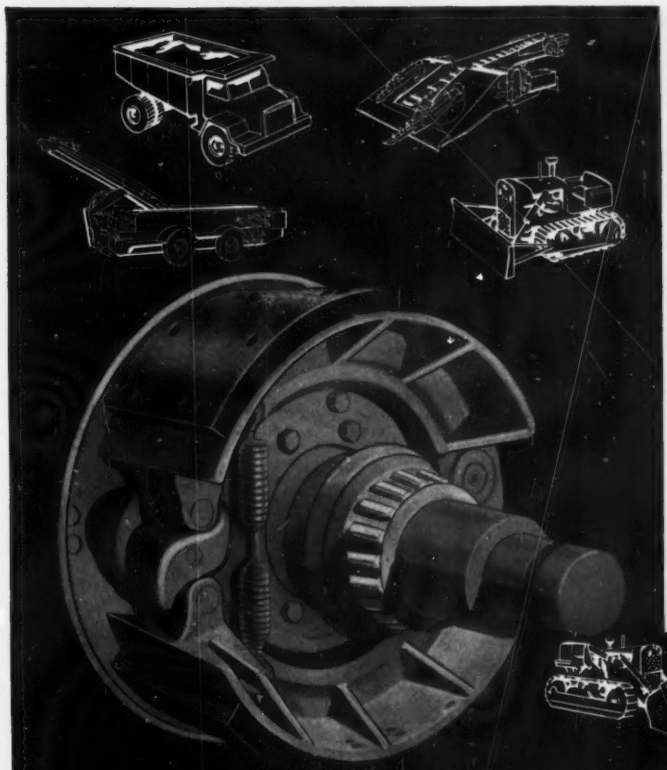


Allis-Chalmers new HD-7G brings to six the number of tractor shovels in the firm's construction machinery line. It features power steering, power brakes and power shifting with an exclusive "Ground Speed Control" governor.

Insist on Velvetouch Feramic®

all-metal brake blocks, clutch plates and facings

for all types of mine equipment

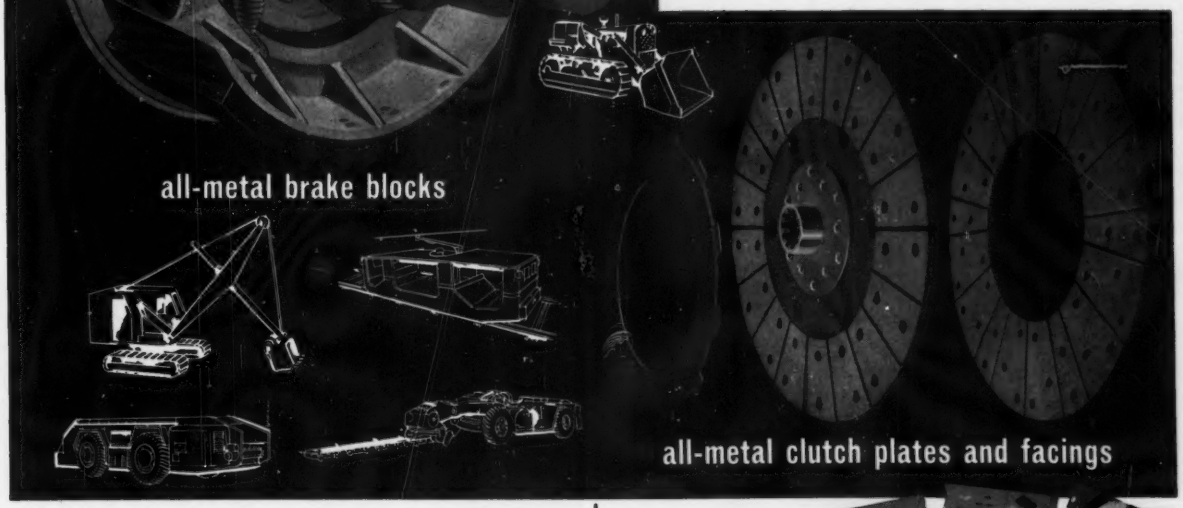


On heavy-duty coal trucks, tractors, mine equipment of all types, Velvetouch Feramic all-metal brake blocks permit faster operating speeds with greater safety.

They brake best where others fail . . . eliminate heat and water fade . . . stop high speed and downhill fade. Priced competitively with best grades of asbestos, they give longer drum life and lower cost per mile.

And . . . Velvetouch Feramic clutch plates and facings give superior service in practically every make of mine machinery for strip or deep work. They last 2 to 3, even 4 or 5, times longer than ordinary materials . . . improve clutch performance . . . stop slipping and chattering . . . reduce adjustments and downtime . . . cut maintenance costs.

When you need replacement brake blocks, clutch plates or facings, specify Velvetouch Feramic. Available from all leading equipment dealers, mine supply houses and industrial parts distributors. A-5568A



THE S. K. WELLMAN COMPANY
Bedford, Ohio

In Canada: The S. K. Wellman Co. of Canada, Ltd.,
208 Bartley Drive, O'Connor Depot,
Toronto 16, Ontario.

Write for literature, listing equipment for which you need Velvetouch Feramic.

Your Fuel System Needs Special Care in the Winter

(Based on Information Compiled by the Service Department, Caterpillar Tractor Co.)

When temperatures start dropping in the fall, tractor owners are quick to protect cooling systems against an unexpected freeze. Too often, however, they forget to check another possible collection of water that is equally as certain to shut down a tractor as frozen coolant. They forget, that is, until the morning after the first hard freeze when they have to wait for the temperature to climb high enough to melt ice blocking the fuel system.

One such reminder usually is enough to keep them taking special care of their fuel systems for the rest of the winter they can avoid the remainder and resultant delay, however, by starting winter fuel system care as soon as the first freeze threatens. What does special winter fuel system care involve?

As anyone who has ever had a frozen fuel line will tell you, the most important thing is to keep moisture out of the system. Cool temperature condenses moisture from the air. Thus during cold nights, as the air in the top of the fuel tank cools, water forms and settles to the bottom. From there it can travel through the fuel system, settling in low places in the fuel line and in the base of the fuel filter housing. When the tractor stands overnight in freezing weather, these collections of water turn to ice.

Frozen fuel lines need never stop a tractor, however. Simply filling the fuel tank at the end of each day's work drives out all moisture-laden air and almost entirely eliminates water from condensation. (Of course, there is always the possibility that the fuel contained moisture when purchased.)

In spite of faithful evening refueling, though, some moisture will get into the system. Since it is heavier than diesel fuel, it settles in two predictable places. Caterpillar-built Tractors have drains in those two spots for removing water.

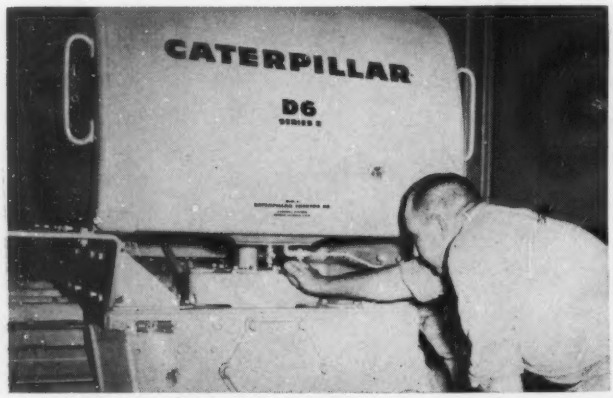
The first is at the base of the fuel tank. In warm weather, it is recommended that water be drained from the fuel tank before starting the engine in the morning. This procedure assures that only clean fuel will leave the tank that day. In freezing weather, however, an owner takes a chance on a possible freeze-up by waiting until morning to drain collected water from the fuel tank. Instead, he should drain it at the end of the day, after allowing the tractor to sit a while to give the water a chance to settle. Caterpillar suggests that during summer operation, water in the fuel tank be drained every 125 service meter hours. To be safe in the winter, drain it every 50 hours. (These service periods assume the tank is being filled each evening.)

The second moisture drain on Caterpillar fuel systems is at the base of the fuel filter housing which contains a sump to trap any remaining moisture carried in the fuel. When the temperature is below freezing, trapped water in the filter housing should be drained each day before the operator goes home at night. Trapped air may have to be bled from the system after moisture is drained from the filter housing.

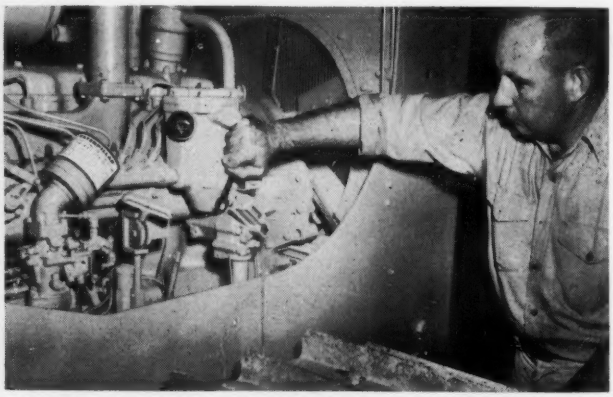
The pour point of the fuel being used also has to be considered during cold weather. To assure free fuel flow, use fuel with a pour point at least 10° F. lower than the lowest ambient temperature during working hours. Such "winter grade" fuels are available in most areas.

Don't wait for freezing weather, though, to change to winter grade fuel. Wax in "summer grade" fuel may start to gel at temperatures above freezing, partially plugging the fuel filters. Since wax content is the prime factor affecting the pour point, switching to low pour point fuel early in the season will reduce the danger of filters becoming clogged by wax during sub-zero weather.

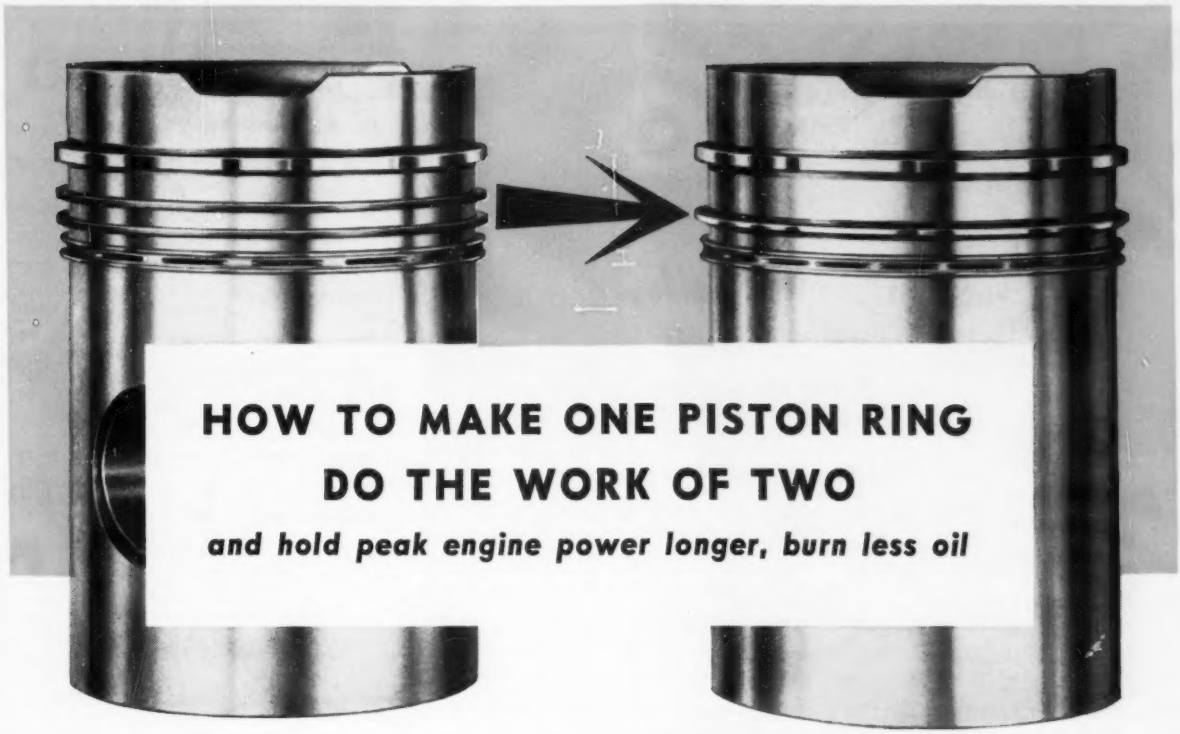
Regardless of when you change to "winter grade" fuel, watch the pressure gage more closely than usual. It tells you when your filters are becoming clogged. And there's greater danger of clogging when the weather turns cold.



Moisture in your tractor's fuel system can collect in low and, when the weather turns cold, freeze, shutting off the flow of fuel. To prevent a possible delay, drain water both from the fuel tank and . . .



. . . from the fuel filter housing. Drain water at the end of the working day after letting the tractor sit a while to give the water a chance to settle.



HOW TO MAKE ONE PISTON RING DO THE WORK OF TWO

and hold peak engine power longer, burn less oil

A new piston and ring design from Caterpillar cuts oil consumption 33 to 50% and gives D7, D8 and D9 Tractors many more hours of full-horsepower productivity.

Secret of the new three-ring design lies in three major piston and ring improvements. First is an added cast-iron ring band in the piston for the middle compression ring. Second is the middle ring itself — replacing the two center compression rings of the old design and acting as a special "wiper" ring as well. Finally, *all* rings are chrome faced, then bright lapped to insure flawless quality.

Here's how these three improvements hold down oil consumption and insure longer, full-horsepower performance:

EXTRA CAST-IRON RING BAND resists groove "pound out," holds the ring *longer* in correct position for maximum face-to-liner sealing, postpones power losses *behind* ring and around groove.

NEW COMPRESSION RING is a "twist" ring. During the power stroke, it actually changes position so that the face has *more sealing area* on the liner wall than ordinary rings, eliminating the need of another compression ring. At the same time, the ring puts a finishing touch to the oil film left by the regular oil control ring, thinning the film so there's less oil left to burn away.

THICK CHROME-PLATING FOR ALL RING FACES gives new life to ring sets. All faces are "bright-lapped," mirror-like, so rings with even minute flaws can easily be seen and rejected. This assures almost perfect seating right from the start and goodbye to break-in blow-by, slobbering and scuffing.

Initial cost of the new pistons is slightly more, because of the extra cast-iron ring band. Ring costs, of course, are less, since you only need three. But operating costs are the real news — less fuel and oil is consumed and full work capacity of your engine is maintained for a longer time. They're available now at your Caterpillar Dealer.

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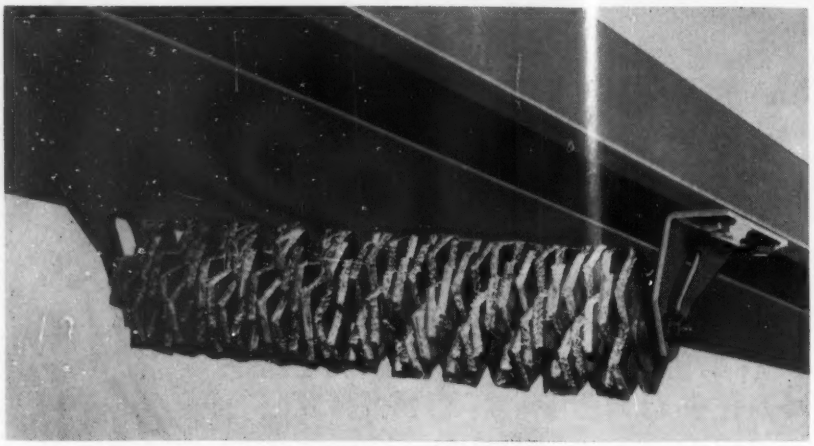

Webster Belt Saver Cleaning Idler

● A bulletin describing its new line of Belt Saver Cleaning Idlers is announced by Webster Manufacturing, Inc.

The new idler is a unique assemblage of resiliently deformable material mounted spirally to produce cleaning action removing granular particles from conveyor belts.

The announcements states this new idler was developed for toughest-service conditions on conveyors handling wet, sticky or frozen ores, sand, lime, clay, coal and similar materials.

According to Webster, the new idler has been job-proven in 10 years' service in the Mesabi iron range in northern Minnesota. Its advantages are said to be that it prolongs belt life, prevents return belt or roll "built-up", is corrosion- and temperature-proof, eliminates belt crowning on return, and cleans itself while it cleans the belt.

The new idlers are patented and made in all belt widths with 6" diameter rolls and ¾" roller bearings.

For more complete information, request Catalog Section CI-961.

● The S. K. Wellman Company, Bedford, Ohio, received the Automobile Service Industry Association's annual award for distinguished service to the automotive trade.

An embossed scroll was presented to Wade E. Canfield, Wellman vice president in charge of sales, by J. L. Wiggins, association executive vice president. The latter also paid tribute to Wellman's 36 years of automotive pioneering during which the firm has become the world's largest manufacturer of all metal clutch plates, facings and brake block for trucks. Wellman has also recently introduced a complete line of powdered metal brake linings for passenger cars under the tradename "Velvetouch Metalik".

The Automotive Service Industry Association is a national trade organization representing over 5,000 independent manufacturers, wholesalers, warehouse distributors and rebuilders of automotive service products.

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7-W B.E. Diesel Drag, 140', 7 yd.
7400 Marion Diesel Drag, 175', 13 yd.
625 Page Diesel Drag, 150', 9, 10 & 10½ yd. Buckets.
631 Page Elec. Drag, 200', 8 yd.
621-S Page Diesel Drag, 125', 7 yd.
183-M Marion Diesel Drag, 130', 8 yd.
200-W B.E. Diesel Drag, 125', 6 yd.
2400 Lima Diesel & Elec. Drags, 130', 6 yd.
7200 Marion Diesel Drag, 135', 5 yd.
4500 Manitowoc Drag. 120', 5 yd. & 140', 4 yd.
120-B B.E. Elec. Drag, 115', 5 yd.
111-M Marion Drag, 100', 4 yd.
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5323 Marion 18 yd. Elec. Shovel
190-B B.E. 8 yd. Elec. Shovel
151-M Marion 7 yd. Elec. Shovel
1600 P&H 6 yd. Elec. Shovels
170-B B.E. 6 yd. Elec. Shovels.
4161 Marion 6 yd. Elec. Shovel
2400 Lima 6 yd. Std. & H.L. Shovels
120-B B.E. & 4121 Marion 4 yd. Elec. Shovels
4500 Manitowoc 5 yd. H.L. Shovel
1201 Lima 3½ yd. Standard Shovel
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3500 Manitowoc Standard & H.L. Shovels
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2—Joy 14BU 9AE Super Loaders—26" Hi—New 1958.
2—Joy 14BU Loaders, low pedestal, 7AE, 1956 & 57.
4—Joy 14BU Loaders, medium pedestal,7RBE.
2—Joy 14BU 7CE high pedestal loaders.
4—Joy 14BU 3PE Loaders.
2—Joy 12BU Loaders complete with Piggybacks.
2—Joy 12BU Loaders, 9E latest type 250 V. DC.
3—Joy 12BU Loaders, 220/440 Volt AC.
1—Joy 20BU Loader, latest type.
4—Joy 11BU Loaders, latest type.
1—Joy 8BU Loader, 34" overall height.
1—Joy 8BU Loader,220 V. AC.
1—Joy curved Bar Head for 14BU, complete.
6—Reliance 24-J Motors, 7½ H.P.
4—Reliance 38-J Motors, 10 H.P.
2—Reliance 40-J Motors, 15 H.P.
20—Reliance 9-J Motors, 4 H. P.
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1—Goodman 665 Loader on Crawlers, latest type 250 V. DC.
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5—8SC Shuttle Cars, as removed from service, 26" Hi.
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6—Joy 6SC Shuttle Cars, as removed from service.
1—Joy 5SC Shuttle Car, Excellent.
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2—Joy 32E10 Shuttle Cars, rebuilt.
6—Joy 32E15 Shuttle Cars, rebuilt.
4—Joy 32E16 Shuttle Cars, rebuilt.
16—Joy 42E16 Shuttle Cars, rebuilt and as is.
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1—Joy T-2-6 low pan Crawler Truck with reel.
2—Joy T-1, Standard Crawler Trucks, 220 AC.
1—Joy T-1 Standard Crawler Truck, 250 DC.
4—Joy 11-B Cutting Mach., like new, 35 & 50 HP.
4—Joy 7-B Cutting Machines, like new, 250 and 500 Volt.
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2—Goodman 312 Cutting Machines, 17" high.
2—Goodman 412 Cutting Machines, 19" high.
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1—Goodman 2400 Rubber Tired Cutter, Universal head, like new, 34" Overall Height.
1—Sullivan 7AU on Dual Rubber Tires 250 V. DC.
6—7AU's on track, Universal head.
2—Jeffrey 29UC Cutting Machines, Universal head, cuts anywhere in seam, 38" high, on Crawlers, 250 volt D.C.
4—Jeffrey 29LC on Crawlers, rebuilt or as removed from service.

LOCOMOTIVES

1—Goodman 6 ton, 93-A, 27" high, armor plate frame.
1—Jeffrey 15 ton MH-77 locomotive, armor plate frame.
7—Jeffrey, 13 ton, type MH-110, 36", 42" and 44" ga.
2—Jeffrey 10 ton, type MH-110, 42" and 44" ga.
2—Jeffrey, 10 ton, type MH-78, 42" and 44" ga.
2—Goodman 8-30 and 10-30 Locos., 26" above rail.
1—Jeffrey MH-150, 6 ton, 26" overall height, rebuilt with reel.
12—Jeffrey, 6 ton, type MH-88, 42", 44" and 48" ga.
4—Jeffrey, 8 ton, type MH-100 2½" armor plate frames.
3—Jeffrey, 4 ton, type MH-96, 42", 44" and 48" ga.
1—G.E., 4 ton, type 825 Locomotive, 22" high.
10—G.E., 6 ton, types 801, 803, 821 Locomotives. 42", 44" and 48" ga
1—G.E., 8 ton, type 822 Locomotive, 44" ga.
3—G.E., 10 ton, type 809 Locomotives, 42", 44" and 48" ga.
2—G.E. 830, 12 ton, Locomotives, Excellent.
2—G. E. 13 ton, type 829 Locomotives, armor plate frames.
1—Goodman 91A Locomotive, 8 ton, 26" overall height.
2—Goodman, type 33, 6 ton, 44" and 48" ga.
3—Westinghouse type 902, 4 ton, 42" and 48" ga.
1—Atlas Battery Locomotive, 36" ga.
1—Atlas Trolley Locomotive, 4 ton, 24" high.
2—Westinghouse, type 904, 6 ton, 44" and 48" ga.
2—Westinghouse, type 906, 44" and 48" ga.
2—Westinghouse, type 907, 10 ton, 44" and 48" ga.
3—Westinghouse 908, 13 ton, Locomotives, 42" and 48" ga.
8—Jeffrey MH-78 Locomotive Units, cheap.
4—Jeffrey MH-88 Locomotive Units, real bargains.
6—Jeffrey MH-100 Locomotive Units, reasonable.
3—Plymouth Diesel Locomotives, 8 and 10 tons, 42" and 44" ga.
Locomotive Trucks & Spare Armatures for the above.

TIPPLE EQUIPMENT

1—All Steel 5 Track Tipple, new 1957, complete with washer, silo, oil treating system, all bolted construction.
1—Complete Five Track Tipple with Washers and Air Tables.
1—CMI Dreyer
1—Complete stoker plant, all steel.
2—Complete Tipples, 3 & 5 track, steel and wood.
3—Cleaning Plants, 1 ea. McNally, Roberts and Schaefer, Jeffrey Washers and Air-Flo Tables.
4—Complete Aerial Trams for coal or refuse.
3—Complete Rope and Button Lines.
2—Monitor Lines complete with Drums, excel.
1—Allis-Chalmers 5 x 12 Rippflo Vibrator.
1—Allis-Chalmers 4 x 12 Low-Head Vibrator.
1—Robins Gyrex Vibrator, 4 x 10.
10—Belt and Apron type Loading Booms.
6—Shaker Screens.
1—Robins Car Shakeout.
1—Gundlach Crusher, like new.
20—Crushers, various sizes—Jeffrey, Link-Belt. McLanahan & McNally.
4—Mine Scales, 10 & 20 ton.
5—Truck Scales, 25 to 40 ton, New and Used.
Feeders, Belt and Drag Conveyors, Car Retarders.

CUTTING MACHINES

1—Joy 10 RU Rubber Tired Cutter, Universal head, 250 V. DC. As is or rebuilt.
1—Joy 11RU Rubber Tired Cutter, 250 V. DC.
1—Goodman 2400 Rubber Tired Cutter, Universal head, like new 34" Overall Height.
2—Jeffrey 29 UC Universal Machines on Crawlers.
1—Goodman on Crawlers, 31" overall height.
4—Baby Goodman 212's, rebuilt, 250 V. DC.
2—Goodman 312 Cutting Machines, 17" high.
3—Goodman 412 Cutting Machines, 19" high.
6—Goodman 512's with Bugdusters, like new.
4—Goodman 512's, rebuilt, or as removed from service.
6—Goodman 612's—250 & 500 Volt.
3—Goodman 112's, 220/440 Volt A. C.
4—Joy 7-B Cutting Machines, 250 and 500 Volt.
4—Joy 11B Cutting Machines, rebuilt, 35 & 50 H. P.
1—Sullivan dual rubber tires 3" high. Universal Head.
6—7AU's, on track, Universal head.
10—Goodman 12AA's and 112AA's, 250 V. D.C.
2—Goodman 324 Slabbers.
2—Goodman 724 Slabbers.
2—Goodman 824 Slabbers.
6—Jeffrey 35L's, like new, 250 V. D. C. 17" high.
2—Jeffrey 35L's, on low vein trucks.
1—Jeffrey 35BB 220/440 AC.
15—Jeffrey 35B's and 35BB's 250 V. D. C.
2—Jeffrey 29B's on track.
10—Jeffrey 29C's track mounted.
2—Jeffrey 29L's, on Crawlers. Excellent.
4—Sullivan CE7, 220/440 V. AC.

CONVEYORS

1—Each 30" and 36" Joy 1000' extensible belt, latest type, like new.
1—Goodman 97HC 30" Rope Belt, 1000' perfect, With or without rubber.
1—Jeffrey 52-B tandem drive 30" Belt Conveyors, 600' to 2000'.
1—Joy 30" Underground Belt Conveyor. Excell.
2—Barber Greene, 30" and 36" Belt Drive, like new
2,000 52-B Belt Structure, 30".
1,000' Conveyor Belt, 42".
1,500' Conveyor Belt, 36".
2,000' Conveyor Belt, 30".
1,000' Conveyor Belt, 26".
8—Jeffrey 61AM 12" Chain Conveyors, 300'.
2—61EW Elevating Conveyors.
2—61WH 15" Room Conveyors, 300'.
2—Joy 15" Room Conveyors, 300'.
2—Joy 20" Conveyors, 300'.
4—Joy Ladel UN-17 Shakers.
10—Goodman G-12½ and G-15 Shakers.
1,000' Goodman 18" Flat Belt Conveyors, tandem drive any length, Perfect.

CONVERTORS AND DIESEL PLANTS

1—300KW, G.E. Stationary Rectifier.
2—500KW G. E. Stationary Rectifiers.
4—1,000KW Stationary Rectifiers.
2—100KW. G. E. TCC-6's, 275 V., Rotary Converter.
1—150KW. G. E. HCC-6 275 V., Rotary Converter
1—150KW. 6 phase. Allis-Chalmers Rotary Converter, 275 V. D.C.
2—200KW G. E. HCC-6's, Rotary Convertors, 275 V. D. C. Steel frames, Newly rewound.
3—300KW G. E. HCC-6's Rotary Converters, 275 V. D. C. Like New.
2—300 KW West., 6 phase, Rotary Converters. 275 V. D.C.
2—500KW G.E. HCC-6 Rotary Converters, 275 V D.C.
1—200KW West. Rotary Converter, 275 V. D.C. Newly rewound.
(All the above with 6900/13000 and/or 2300/4000 primary transformers).
1—50KW MG Set. 220/440 AC, 275 V. D.C.
1—100KW MG Set. 275 V. D.C.
6—150KW MG Sets, G. E. and West., 275 V.D.C.
2—200KW MG Sets, West., rebuilt, 275 V. D.C.
1—200KW MG Set. G. E. perfect, 275 V. D.C.
2—300KW G.E. MG Sets, like new.
3—300KW Westinghouse MG Sets, 275 V., rebuilt.
1—300KW West. 600 volt MG Set, rebuilt.
2—500KW G.E. 275 V. MG Sets, 2300-4000 V. Primary Rebuilt.
2—200KW G.E. Rotary Converters, 600 V. D.C.
2—300KW Westinghouse, 600 volt, 6 phase. Rotary Converters.
4—300KW G.E. Rotary Converters, 600 V. D.C.
1—500KW G.E. Rotary Converter 275 V. D.C., 6 Ph.
2—500KW Westinghouse, 600 volt, D.C., 6 phase, Rotary Converters.
2—500KW G.E. HCC-6's, Rotary Conv., 6 phase, 600 V. D.C.
1—GMC-671 Diesel w/75 & 110 KW, 250 V. D.C.
1—Cat 318 Diesel with 75KW Generator.
1—Int. UD-14 Diesel with 50 KW, 250 V. D.C. Gen.
1—GMC-471 Diesel with 60KW, 250 V. D.C. Gen.
1—100KW Natural or LP Gas Engine with Generator.

LOADING MACHINES

16—Joy Loaders, 14BU, 12BU, 8BU, 11BU, 20BU.
5—Joy 12BU9E Loaders, 220/440 V. A.C. Excellent.
3—Joy 12BU9E Loaders, latest type.
2—Joy 12BU with Piggyback Conveyors.
1—Goodman 865 Loader, 26", on Crawlers.
1—Goodman 665 Loader, on Crawlers, rebuilt.
1—Goodman 660 Loader, on Crawlers, 250 V. DC.
1—Goodman 460, on track, rebuilt, all hydraulic.
2—Jeffrey 61 CLR's on rubber, 26".
3—Jeffrey L-500 Loaders.
2—Myers Whaley, No. 3 Automatic Loaders.
2—Clarkson Loaders, 26" above rail.

MISCELLANEOUS

1—Jeffrey 76—A Col Mol, 220/440 perfect.
1—Joy 5 JCM Continuous Miner, 220/440, perfect.
150 Tons Copper—4/0 and 9 Section Trolley 1/0, 2/0, 4/0 Stranded, 500 MCM, 750 MCM, 1,000,000 MCM Insulated.
1—Each 4', 5', 6' & 8' Hi Pressure Joy & Jeffrey latest type Fans.
1—Complete Five Track Tipple with washers and Air Tables.
5—Complete Tipples, 3 to 5 Track. Wood and Steel.
Steel trestles for drop bottom cars.
All Steel Armco Buildings.
20—Jeffrey Molveyors on rubber tires.
1—¾ Yard Shovel and Back-Hoe.
2—¾ Yard Crawler Cranes, Gas.
Battery Supply Tractors, Rubber Tired.
1—Cantrell Air Compressor on rubber tires.
10—Air Compressors, 1 H.P. to 40 H.P.
1—Joy self-propelled rubber tired comp., 240 cu. ft.
1—Acme self-propelled rubber tired compressor, 130 cu. ft.
40—Mine Pumps, all types.
1—Differential 40 passenger Man-Trip car.
6—MSA Rock Dusters.
Joy Roof Drills—Schroeder Coal Drills.
2—Phillips Carriers, 44" and 48" ga.
1—Barber-Greene self-propelled Bucket Elevator.
Pipe, Plastic, Steel Transit, all sizes 1" to 6".
25,000 Roof Bolts, all types.
300—Mine Cars, drop bottom, 42" 44" 48" Ga.
300—Mine Cars, 18" high, end dump, 42", 44", 48" Ga.
1—10 ton Mine Car Scale with Recorder.
4—Brown Fayro 15 HP latest type Hoists.
15—Brown Fayro HKL and HG Car Spotters.
1—Brown Fayro Hydraulic Car Spotter.
1—12 ton Differential Slate Larry.
Incline Hoists, 25 to 150 HP.
Shaft Hoists to 700 HP complete.
1—Jeffrey 5', 6' & 8'. Like New, Aerodyne Fans.
6—Storage Tanks, 6,000, 8,000, 10,000 gallons
2,000 Five Gallon G.I. Cans, screw lids.
2,500 tons Relaying Rail, 25lb., 30lb., 40lb. 50lb., 60lb., 70lb., 90lb., 100lb.
500 MCM, 750 MCM 1000 MCM Bare & Insulated.
Thousands of feet of rubber covered three conductor cable. All sizes.
500—Transformers from 1 to 500 KVA, 110 to 13,000 primary volts.
400—Electric Motors, 3 to 250 H.P.
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600—MSA Mine Lamps, Charges, etc.
4—Mine Scales, 10 & 20 tons.
5 Truck Scales, 25 to 40 tons, late type.
Mack & International tandem dump trucks.
1—Hart Bros. 60" San Mill — Perfect Cheap.
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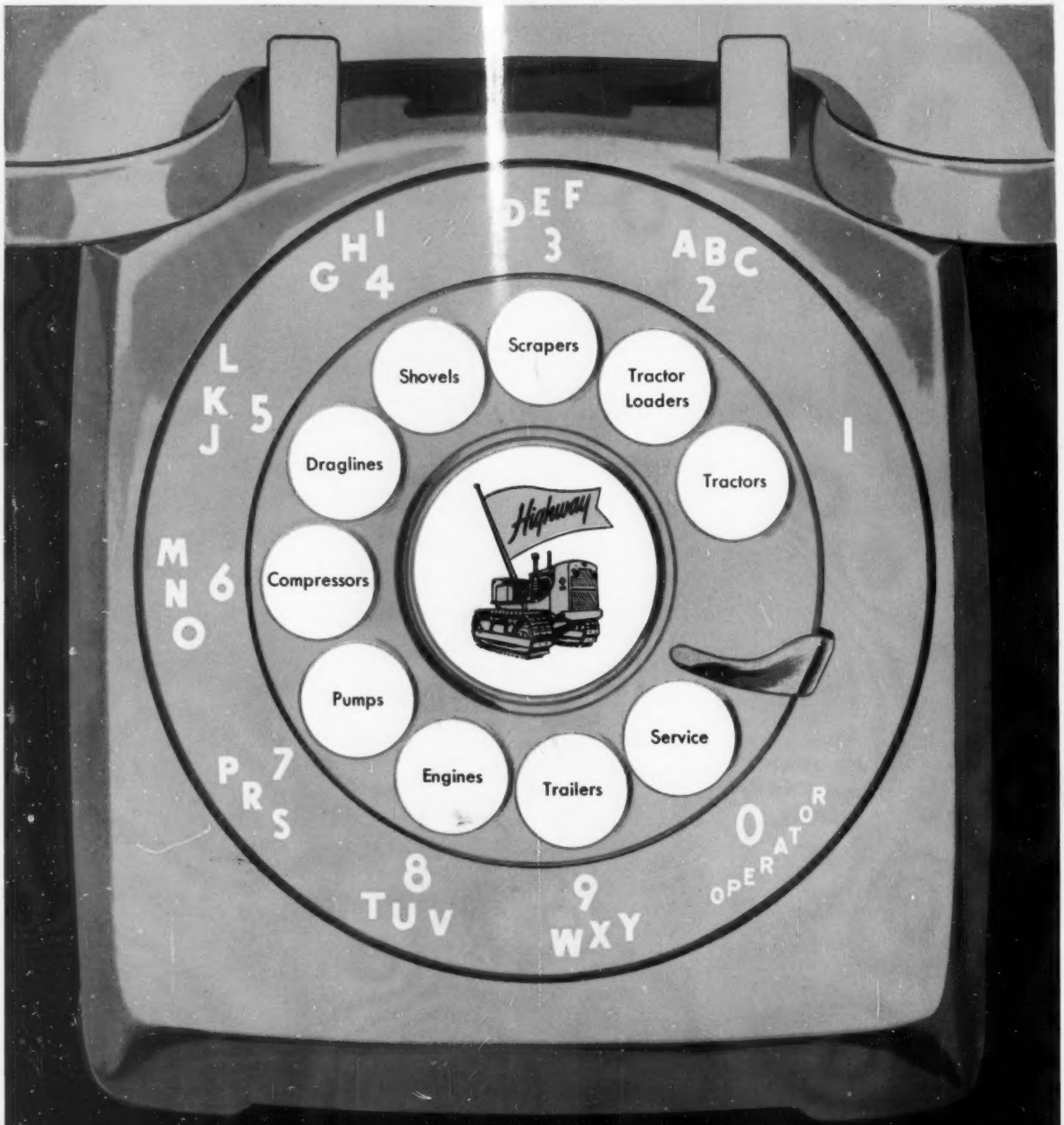

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